



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/824,529

04/15/2004

Akio Misaka

60188-839

6593

7590 05/17/2007
Jack Q. Lever, JR.
McDERMOTT, WILL & EMERY
600 Thirteenth Street, N.W.
Washington, DC 20005-3096

EXAMINER

ROSASCO, STEPHEN D

ART UNIT

PAPER NUMBER

1756

MAIL DATE

DELIVERY MODE

05/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/824,529	Applicant(s) MISAKA, AKIO	
	Examiner Stephen Rosasco	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 39-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :4/6/04, 9/8/05, 12/30/04, 4/15/04.

Detailed Action

Applicant's election without traverse of Group I (claims 1-38) in the reply filed on 04/20/07 is acknowledged.

The disclosure is objected to because of the following informalities: page 6, lines 5-8, "need to provide in a position".

Appropriate correction is required.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-38 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-40 of prior U.S. Patent No. 7,060,398. This is a double patenting rejection.

The claimed invention is directed to a photomask comprising, on a transparent substrate: a semi-shielding portion having a transmitting property against exposing light; a transparent portion surrounded with said semi-shielding portion and having a transmitting property against the exposing light; and an auxiliary pattern surrounded with said semi-shielding portion and provided around said transparent portion, wherein said semi-shielding portion and said transparent portion transmit the exposing light in an identical phase with respect to each other, and said auxiliary pattern transmits the exposing light in

Art Unit: 1756

an opposite phase with respect to said semi-shielding portion and said transparent portion and is not transferred through exposure.

The applicant discusses the limitations of the prior art in that there is a reciprocal relationship between the optimum illumination conditions for isolated fine space patterns and the optimum illumination conditions for densely arranged patterns or fine line patterns. Therefore, in order to simultaneously form fine resist patterns and fine isolated resist removal patterns, trade-off is considered between the effect of a vertical incident component and the effect of an oblique incident component of the light source. As a result, a light source with an intermediate degree of coherence (of approximately 0.5 through 0.6) is used. In this case, however, both the effects of the vertical incident component and the oblique incident component are cancelled, and therefore, it is difficult to realize a higher degree of integration of semiconductor devices by simultaneously thinning isolated line patterns or dense patterns and isolated space patterns.

In the claimed invention the object is to deal with this problem by simultaneously thinning isolated space patterns and isolated line patterns or dense patterns.

Misaka (see claims 1-37, Figs. 1, 2, and cols. 12-13) addresses all of the claims. In Figs. 1 and 2, the center portion (4) is transparent, the surrounding area (5) is phase shifting, the outer area (3) is semi-light-shielding, and the phase of the phase shifting area is opposite to that of the other two areas. "...a mask pattern having light-shielding properties with respect to the exposure light and a light-transmitting portion of the transparent substrate where the mask pattern is not located are provided, the mask pattern includes: a semi-light-shielding portion which transmits the exposure light in the

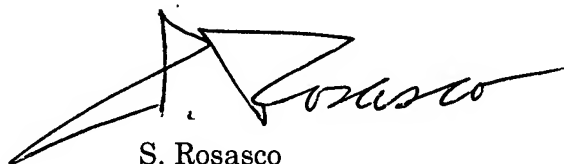
Art Unit: 1756

same phase as that of the light-transmitting portion; and a phase shifter which transmits the exposure light in a phase opposite to that of the light-transmitting portion, the semi-light-shielding portion has a transmittance which allows the exposure light to be partially transmitted, and the phase shifter is provided in a region of the mask pattern in which light transmitted through the phase shifter can cancel part of light transmitted through the light-transmitting portion and the semi-light-transmitting portion.”

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Rosasco
Primary Examiner
Art Unit 1756

S. Rosasco
05/06/07